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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SEDIGHIAN, REZA	
ART UNIT	**PAPER NUMBER**
2613	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/812,545	MELICK ET AL.	
	Examiner	Art Unit	
	M. R. Sedighian	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1,3,4,21-23,25,38-42,45-47,49,50 and 58-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,21-23,25,38-42,45-47,49,50 and 58-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. This communication is responsive to applicant's 1/4/07 amendments and remarks. The amendments have been entered. Claims 1, 3-4, 21-23, 25, 38-42, 45-47, 49-50, and 58-65 are now pending.

2. In claims 1, 38, and 47, the phrase "a plurality of the bits of data", should change to --- the digital bits of data ---, since the phrase "a plurality of the bits of data" refers to the digital bits of data. Correction is required.

3. Claims 1, 3-4, 21-23, 25, 38-42, 45-46, and 58-61 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999).

The term "characteristics" in claims 1, 21, 38, and 58 is used by the claim to mean "different pulses and/or different pulse shapes and/or different pulse waveforms", while the accepted meaning is "waveforms." The term is indefinite because the specification does not clearly redefine the term. One of the ordinary skill in the art recognizes that the phrase "pulse characteristic" refers to three characteristics of a pulse such as: Amplitude, Width, and Frequency.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 3-4, 21-23, 25, 38-40, 42, and 45-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Campana, Jr. (US Patent No: 6,198,783 B1).

Regarding claims 1, 21, and 38, as it is understood in view of the above 112 problem, Campana, teaches a method of transmitting data (see abstract), comprising: receiving (113, fig. 7) digital bits of data (col. 41, lines 14-16) from a memory unit (111, fig. 7); transforming the bits of data into a single transmission pulse (col. 24, lines 64-67, col. 25, lines 1-5, col. 38, lines 41-47), the single transmission pulse having a pulse waveform selected from a set of at least ten predetermined pulse waveforms (col. 38, lines 48-50, pulse width modulation with sixteen possible widths), one of which is corresponding to the bits of data (col. 38, lines 48-50, col. 39, lines 40-42, 4 serial bits of data and PWMs in fig. 6B); and transmitting the single transmission pulse over a guided medium (guided medium between the modulator 113 and transmitter 124, fig. 7) to a receiver (104, fig. 7) without using a carrier signal to transmit the single transmission pulse (col. 41, lines 58-61); wherein the set of at least ten pulse waveforms correspond to pulse durations, and wherein the pulse durations include ten separate pulse durations (col. 38, lines 48-49, the pulse width modulation has sixteen possible widths), each of the separate pulse durations corresponding to one of integers 0 through 9 (col. 38, line 49, col. 39, lines 40-45 and fig. 9).

Regarding claims 3 and 45, Campana further teaches the data is in the form of universal character encoding (col. 51, lines 8-14).

Regarding claim 4, Campana further teaches receiving (104, fig. 7) the single transmission pulse from the transmission medium (transmission medium at the output of encoder 110) at the receiver (104, fig. 7), and transforming the single transmission pulse into the plurality of a digital bit of data corresponding to the characteristics of the transmission pulse (col. 42, lines 38-40 and fig. 13).

Regarding claims 22 and 25, Campana teaches the transmission pulse can be a pulse of light that can transmitted over a fiber optic cable (col. 65, lines 55-58 and fig. 20).

Regarding claim 23, Campana teaches the transmission pulse is an electronic pulse (col. 39, lines 35-40, col. 40, lines 49-55) that is transmitted over a guided media (transmission medium at the output of encoder 110).

Regarding claim 39, Campana teaches the transmission pulse characteristics corresponding to the bits of data is the transmission pulses position in time (col. 50, lines 47-56 and figs. 6B, 9).

Regarding claim 40, Campana teaches the transmission pulse characteristic corresponding to the bits of data is the duration between transmission pulses (col. 38, lines 48-49).

Regarding claim 42, Campana teaches the transmission pulse characteristic corresponding to the bits of data is the duration of the transmission pulses (col. 38, lines 47-50).

Regarding claim 46, Campana further teaches receiving (104, fig. 7) the single transmission pulse from the transmission medium (transmission medium at the output of encoder

110), and transforming the single transmission pulse into a plurality of digital bits of data corresponding to the specific characteristics of the transmission pulse (col. 42, lines 38-40 and fig. 13).

6. Claims 47 and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Hirt (US Patent No: 5,926,301).

Regarding claim 47, Hirt teaches a method of transmitting data with electronic pulses (col. 2, lines 55-60, col. 3, lines 47-50 and fig. 10), comprising: receiving digital bits of data from a memory unit (col. 10, lines 52-67, col. 11, lines 1-3, for example memory in the FSK unit 61, or the means for adjusting the data throughput for the transmission of data); transforming the bits of data into a single transmission pulse of electrical energy (col. 4, lines 24-30 and PPM, fig. 10), the single transmission pulse having a pulse position selected from a set of ten or more predetermined pulse positions (col. 4, lines 30-35, L possible pulse positions), one of which is corresponding to the bits of data (col. 4, lines 32-35); and transmitting the single transmission pulse over a transmission medium (the transmission medium connected to the output of PPM unit) without using a carrier signal to transmit the single transmission pulse (col. 10, lines 58-59).

Regarding claim 50, Hirt further teaches receiving the single transmission pulse from the transmission medium (col. 10, lines 58-59 and 63, fig. 10), and transforming the single transmission pulse into a plurality of digital bits of data corresponding to the specific characteristics of the transmission pulse (col. 10, lines 15-51).

7. Claims 62-64 are rejected under 35 U.S.C. 102(e) as being anticipated by Fullerton et al. (US Patent No: 7,027,425).

Regarding claim 62, Fullerton teaches a method of data transmission (602, fig. 6) that is comprised of representing a symbol (col. 5, lines 38-51 and fig. 2A) encoding (col. 3, lines 65-67, col. 11, lines 16-20) a plurality of bits of data (col. 5, lines 39-41, col. 11, lines 27-31) using a pulse characteristic of a single time modulated ultrawideband radio-frequency pulse (col. 5, lines 40-55, col. 11, lines 1-6), and transmitting the single time modulated ultrawideband radio-frequency pulse (col. 11, lines 32-35 and 626, 624, fig. 6).

Regarding claim 63, Fullerton teaches transmitting the time modulated ultrawideband pulse over an electrically conductive guided medium to a receiver (602, 622, 626, 624, fig. 6).

Regarding claim 64, Fullerton teaches each of the pulse characteristic within the set is a pulse duration (col. 5, lines 45-55 and fig. 2A).

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1, 4, 21-23, 25, 38-42, 46-47 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki et al. (US Patent Application Publication No: 2001/0055353 A1).

Regarding claims 1, 21, 38, and 47, as it is understood in view of the above 112 problem, Rybicki teaches a method of transmitting data (page 1, paragraph 0001 and fig. 1), comprising: receiving digital bits of data from a memory unit (page 9, paragraph 0089 and data

receiver 14 and set of bits 24 in figs. 1, 15); transforming the bits of data into a single transmission pulse (page 3, paragraph 0049, page 4, paragraph 0059, the set of bits of data transmitted as a single pulse, shown in fig. 1), the single transmission pulse (26, fig. 1) having a pulse waveform selected from a set of a plurality of different predetermined pulse waveforms (for example, different.pulse waveforms that are shown in figs. 4, 5,6), one of which is corresponding to the bits of data (page 9, paragraph 0087); and transmitting (10, 20, fig. 1) the single transmission pulse (28, fig. 1) over a guided medium (32, fig. 1) to a receiver (38, 46, fig. 1) without using a carrier signal to transmit the single transmission pulse (page 3, paragraph 0049); wherein the set of plurality of pulse waveforms (for example ten of the pulse waveforms shown in figs. 4, 5, 6) correspond to pulse durations (note that pulse durations are different for different sets of bits, for example, different pulse durations for the set of bits 0011 and 0100, shown in fig. 4 and different pulse durations for the set of bits 1100 and 1111, shown in fig. 5), each of the separate pulse durations corresponding to one of integers 0 through 9 (page 9, paragraph 0087, note that the width of the pulses corresponds to the bits of data, or to the numbers 0 through 9, as it is shown in figs. 4, 9). Rybicki differs from the claimed invention in that Rybicki does not specifically disclose the pulse durations include ten separate pulse durations each corresponding to one of integers 0 through 9. However, Rybicki discloses a pulse having a first pulse width when the set of bits is in a first range, a second pulse width when the set of bits is in a second range, and a thirds pulse width when the set of bits is in a third range (page 9, paragraph 0087 and 234, fig. 13). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention that a pulse width modulation system and method such as the one of Rybicki can generate and transmit ten separate pulses of different durations,

each representing different set of bits respectively, corresponding to one of integers 0 through 9 (such as the ones shown in figs. 4, 5, 9) to provide a high data rate transmission system (Rybicki, page 2, paragraph 0047). As to claim 47, Rybicki also discloses a method of transmitting data with electronic pulses (page 2, paragraph 0047 and 26, fig. 1), comprising: receiving digital bits of data from a memory unit (page 9, paragraph 0089 and data receiver 14 and set of bits 24 in figs. 1, 15); transforming the bits of data into a single transmission pulse (26, fig. 1) of electrical energy (page 3, paragraph 0049, page 4, paragraph 0059, the set of bits of data transmitted as a single pulse, shown in fig. 1), the single transmission pulse having a pulse position (page 3, paragraph 0049) selected from a set of a plurality of predetermined pulse positions (for example the pulse positions that are shown in figs. 4, 5, 9), one of which is corresponding to the bits of data (page 8, paragraph 0076 and fig. 9); and transmitting the single transmission pulse over a transmission medium without using a carrier signal to transmit the single transmission pulse (page 3, paragraph 0049).

Regarding claim 4, Rybicki further teaches receiving (46, fig. 1) the single transmission pulse from the transmission medium (path 32, fig. 1) at the receiver (38, fig. 1), and transforming the single transmission pulse into the plurality of a digital bit of data corresponding to the characteristics of the transmission pulse (page 3, paragraph 0050).

Regarding claims 22 and 25, Rybicki teaches the transmission pulse is a pulse of light (20, fig. 1) that is transmitted over a fiber optic cable (page 3, paragraph 0049).

Regarding claim 23, Rybicki teaches the transmission pulse is an electronic pulse (pulses 26, fig. 1) that is transmitted over a guided media (the guided medium between modulation circuit 16 and amplifier 18, fig. 1).

Regarding claim 39, Rybicki teaches the transmission pulse characteristics corresponding to the bits of data is the transmission pulses position in time (page 8, paragraph 0076).

Regarding claim 40, Rybicki teaches the transmission pulse characteristic corresponding to the bits of data is the duration between transmission pulses (page 8, paragraph 0074).

Regarding claim 41, Rybicki teaches the transmission pulse characteristic corresponding to the bits of data is the amplitude of the transmission pulse (page 3, paragraph 0049).

Regarding claim 42, Rybicki teaches the transmission pulse characteristic corresponding to the bits of data is the duration of the transmission pulses (page 9, paragraph 0087).

Regarding claims 46 and 50, Rybicki further teaches receiving (46, fig. 1) the single transmission pulse from the transmission medium (path 32, fig. 1), and transforming the single transmission pulse into a plurality of digital bits of data corresponding to the specific characteristics of the transmission pulse (page 3, paragraph 0050).

10. Claims 58-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCorkle et al. (US Patent No: 6,700,939).

Regarding claim 58, as it is understood in view of the above 112 problem, McCorkle teaches a method of transmitting data (col. 2, lines 51-65), comprising: representing a symbol (col. 2, lines 54-55) comprising at least two bits of data (col. 9, lines 59-62, col. 10, lines 53-56)

by varying a pulse waveform of a single time modulated ultrawideband radio-frequency pulse (col. 5, lines 30-45, note that the signal pulse transmitting in line 108 is a single time modulated ultrawideband radio-frequency pulse) based on the value of the at least two bits of data (col. 5, lines 40-44, col. 9, lines 37-40), transmitting the time modulated ultrawideband pulse (col. 9, lines 59-62, col. 10, lines 53-59) over a guided medium (121, 108, 110, 123, 125, fig. 1) to a receiver (col. 3, lines 22-25, col. 18, lines 40-55 and fig. 2A). McCorkle differs from the claimed invention in that McCorkle does not specifically disclose the pulse waveform is selected to be one of a set of at least ten pulse waveforms based on the value of the at least two bits of data. However, McCorkle discloses generating first short impulse wavelets of a first predetermined shape, and generating second short impulse wavelets of a second predetermined shape (col. 15, lines 7-10). McCorkle discloses further discloses generating a plurality of time offset replicas of respective impulse wavelets (col. 15, lines 35-37). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention that a pulse waveform generation system such as the one of McCorkle can generate ten different pulse waveforms, based on the value of the bits of data to transmit a plurality of different data signals and increasing the transmission capacity of the system. As to claim 62, McCorkle teaches a method of data transmission that is comprised of representing a symbol (col. 2, lines 54-55) encoding (119, 111, fig. 1) a plurality of bits of data (col. 9, lines 60-66, col. 10, line 54) using a pulse characteristic of a single time modulated ultrawideband radio-frequency pulse (col. 5, lines 30-45), and transmitting the single time modulated ultrawideband radio-frequency pulse (col. 10, lines 53-59).

Regarding claims 59 and 64, McCorkle teaches each of the pulse waveform within the set is a pulse duration (col. 5, lines 42-44).

Regarding claim 60, McCorkle teaches each of the pulse waveform within the set is a pulse position (col. 4, lines 52-55, col. 9, lines 55-57).

Regarding claim 61, McCorkle teaches each of the pulse waveform within the set is a pulse spacing (col. 9, lines 37-40).

Regarding claim 63, McCorkle teaches transmitting the time modulated ultrawideband pulse (col. 9, lines 59-62, col. 10, lines 53-59) over an electrically conductive guided medium (121, 108, 110, 123, 125, fig. 1) to a receiver (col. 3, lines 22-25, col. 18, lines 40-55 and fig. 2A).

11. Claims 58-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fullerton et al. (US Patent No: 7,027,425 B1) in view of Ichiba et al. (US Patent No: 6,546,048 B1).

Regarding claim 58, as it is understood in view of the above 112 problem, Fullerton discloses a method of transmitting data (col. 1, lines 8-11 and 602, fig. 6), comprising: representing a symbol (col. 5, lines 38-51 and fig. 2A) comprising at least two bits of data (col. 5, lines 36-41, col. 11, lines 27-31) by varying a pulse waveform of a single time modulated ultrawideband radio-frequency pulse (col. 3, lines 19-30, col. 5, lines 40-55, col. 11, lines 1-6) based on the value of the at least two bits of data (col. 4, lines 4-7, col. 5, lines 39-41), and transmitting the time modulated ultrawideband pulse over a guided medium to a receiver (602, 622, 626, 624, fig. 6). Fullerton differs from the claimed invention in that Fullerton does not specifically disclose the pulse waveform is selected to be one of a set of at least ten pulse

waveforms based on the value of the at least two bits of data. Ichiba discloses a pulse generator (fig. 1) and a method of transmitting data (col. 1, lines 8-10) in which a symbol comprising at least two bits of data is generated (col. 3, lines 4-5) and a pulse waveform of a single time modulated radio frequency pulse is varied (col. 3, lines 1-3), and wherein the pulse waveform is selected to be one of a set of at least ten pulse waveforms (col. 3, line 2, the 2^n kinds of pulse width modulation signals of different pulse widths) based on the value of the two bits of data (col. 3, lines 11-14, the partial bits of the digital signal of n bits). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a method of signal pulse generation such as the one of Ichiba for the signal pulse generation system of Fullerton to generate a plurality of pulses of different durations representing different bits of information to further increase the transmission capacity of the system.

Regarding claim 59, Fullerton teaches each of the pulse waveform within the set is a pulse duration (col. 5, lines 45-55 and fig. 2A).

Regarding claim 60, Fullerton teaches each of the pulse waveform within the set is a pulse position (col. 3, line 65-66).

Regarding claim 61, Fullerton teaches each of the pulse waveform within the set is a pulse spacing (col. 3, line 65-66).

12. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rybicki et al. (US Patent Application Publication No: 2001/0055353 A1) in view of Campana, Jr. (US Patent No: 6,198,783 B1).

Regarding claim 49, Rybicki differs from the claimed invention in that Rybicki does not specifically disclose the data is in the form of universal character encoding. However, it is well known to use universal character encoding standards for representing characters, text, or data. For example, Campana teaches transmission of information such as characters using pulse width modulation and universal character encoding (col. 46, lines 4-7, col. 51, lines 8-14). As it is taught by Campana, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate a method of universal character encoding in the data transmission system of Rybicki to encode different characters or text for further transmission.

13. Claim 65 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCorkle et al. (US Patent No: 6,700,939) in view of Campana, Jr. (US Patent No: 6,198,783 B1).

Regarding claim 65, McCorkle differs from the claimed invention in that McCorkle does not disclose encoding the plurality of bits into a base 10 representation. Campana also teaches a method of transmitting data by representing a symbol (PWM, fig. 6B) encoding a plurality of bits of data (col. 24, lines 64-67, col. 25, lines 1-3) using a pulse waveform of a single time modulated radio-frequency pulse (col. 38, lines 41-53 and fig. 6B), wherein a plurality of bits are encoded in a base 10 representation (col. 46, lines 4-7). Therefore, it would have been obvious to an artisan at the time of invention to incorporate a method of base 10 encoding, as disclosed by Campana, for the encoding in the data transmission system of McCorkle to encode high amounts of information.

14. Applicant's arguments filed 1/4/07 have been fully considered but they are not persuasive.

Remark states Rybicki uses time chips with time slots (as shown in fig. 4 of Rybicki), for example, a single time chip 82 that has four time slots 84 which allows for representation of 4 bits of data by various pulse patterns illustrated in fig. 4. Remark further states there is a distinct difference between representing multiple bits of data with a pulse and representing multiple bits of data with a pulse pattern within a time chip, even when the pulse pattern consist of only a single pulse. Even though Rybicki discloses the use of a time chip with multiple time slots, claim 1 generally and broadly recites a method of signal pulse transmission by incorporating a pulse width modulation method. Rybicki also discloses such a pulse width modulation method and teaches the transmission of set of bits of data as a single transmission pulse having a pulse waveform selected from a set of plurality of predetermined pulse waveforms of different durations, one of which corresponds to the bits of data representing numbers 0 through 9, as discussed above in rejection of claim 1. As to McCorkle in rejection of claims 58 and 62, McCorkle discloses generating a first and second short impulse wavelets of first and second predetermined shape (col. 15, lines 7-10), and generating a plurality of time offset replicas of impulse wavelets (col. 15, lines 35-37). Accordingly the pulse waveform generation system of McCorkle can generate a plurality of different pulse waveforms based on the value of the bits of data, as discussed above in rejection of claim 58. McCorkle also discloses a single symbol encodes a plurality of bits and the signal symbol is represented by a single pulse, as discussed above in rejection of claim 62. Remark further states Fullerton does not disclose that a symbol encoding a plurality of bits is represented. However, Fullerton teaches a symbol (col. 5, lines 38-

51 and fig. 2A) encoding (col. 3, lines 65-67, col. 11, lines 16-20) a plurality of bits (col. 5, lines 39-41, col. 11, lines 27-31). As to claim 49, regarding the use of universal character encoding for representing text or data, remark states Rybicki's use of time chips and time slots would be very inefficient as it would require a very long time chip to provide for universal character encoding. Rybicki discloses pulse width is varied to represent different data (page 8, paragraph 0077). As Rybicki discloses the transmission of different data, and as it is well known to use universal character encoding standards, it would have been obvious to incorporate a method of universal character encoding in the data transmission system of Rybicki to transmit different data such texts or characters. Remark further states neither references of McCorkle and Campana teaches a base 10 symbol and communicates it as a pulse. However, Campana teaches that a base 10 symbol that can be further transmitted as a pulse (Campana, col. 46, lines 4-7, col. 51, lines 8-14).

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (571) 272-3034. The examiner can normally be reached on 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

M. R. Sedighian

M. R. SEDIGHIAN
PRIMARY EXAMINER